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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,860	10/20/2005	Norishige Nanai	10873.1744USWO	6567
53148 7590 05/13/2008 HAMRE, SCHUMANN, MUELLER & LARSON P.C. P.O. BOX 2902-0902 MINNEAPOLIS, MN 55402				
EXAMINER				
GOODWIN, DAVID J				
ART UNIT		PAPER NUMBER		
2818				
MAIL DATE		DELIVERY MODE		
05/13/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/553,860

Applicant(s)

NANAI ET AL.

Examiner

DAVID GOODWIN

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 20-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SE-US)
Paper No(s)/Mail Date 2/6/6
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claim 20 recites, in lines 10-14, forming a n-type polymer only on p-type semiconductor that should be converted.
4. This does not patentably distinguish the claim because under the interpretation that no region should be converted than no polymer is deposited.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 20 through 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang (US 6,723,624) in view of Golovchenko (US 2006/0006377)
7. Wang teaches a method of making a semiconductor device. Said method comprises forming a gate electrode (20) on a substrate (10) (fig 2a). Forming a gate insulation layer (11) on the gate electrode (fig 2b). Forming source and drain electrodes (12) on the gate insulation layer (11) (fig 2c). Forming a field effect transistor by

applying n type semiconductor (13) comprising carbon nanotubes on the gate insulation layer between the source and drain electrodes (12) (fig 2d) (column 3 lines 35-55).

8. Wang does not teach forming a p type semiconductor layer.

9. Golovchenko teaches forming a p type semiconductor out of carbon nanotubes.(paragraphs 0108-0109).

10. It would have been obvious to one of ordinary skill in the art to deposit p type nanotubes in order to form pmos transistor and thereby form cmos which comprises nmos and pmos transistor and maybe used for logic functions.

11. Wang does not teach making devices.

12. Golovchenko further teaches making n type and p type devices (paragraphs 0143).

13. It would have been obvious to one of ordinary skill in the art to make n type and p type device in order to make logic structures

14.

15. Regarding claim 21.

16. As Wang in view of Golovchenko does not make nmos transistor no n modifying polymer is used so the type of n modifying polymer not used does not patentably distinguish the claim.

17. Regarding claim 22.

18. As Wang in view of Golovchenko does not make nmos transistor no n modifying polymer is used so the type of n modifying polymer not used does not patentably distinguish the claim.

19. Regarding claim 23.
20. As Wang in view of Golovchenko does not make nmos transistor no n modifying polymer is used so the type of n modifying polymer not used does not patentably distinguish the claim.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID GOODWIN whose telephone number is (571)272-8451. The examiner can normally be reached on Monday through Friday, 9:00am through 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Loke can be reached on (571)272-1657. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Art Unit: 2818

DJG

/Steven Loke/

Supervisory Patent Examiner, Art Unit 2818